IS41070 – Machine Learning Foundations - Final Project Rubric

Criterion (Weight)	A (Excellent)	B (Very Good)	C (Good)	D (Satisfactory)	F (Weak)
Data Understanding (20 %)	Exhaustive EDA with insightful visuals/statistics; trends, bias, outliers, limitations & context fully articulated	Thorough EDA; minor gaps; most key issues clearly identified & discussed	Basic EDA; limited visuals; superficial interpretation of key aspects	Minimal EDA; critical issues missed or mis-read; weak context linkage	No meaningful EDA or dataset misunderstood
Data Preparation & Modelling (30 %)	Rigorous cleaning; justified preprocessing; ≥5 well-tuned models; clear rationale; reproducible pipeline	Good cleaning; suitable models; some tuning; rationale mostly clear	Essential cleaning only; single fair model; little tuning; sparse justification	Sparse cleaning; simplistic or mis-applied model; unclear rationale	Inadequate cleaning; model choice inappropriate or flawed
Feature Eng. & Transformation	Creative, well-argued feature engineering (e.g. embeddings, derived vars, scaling); clear impact on performance	Sound feature engineering; correct implementation; impact noted	Basic transformations; limited experimentation; little discussion of impact	Minimal transformations; many missed opportunities; unclear effect	No feature engineering or incorrect transformations
Evaluation (30 %)	Proper split/cross-validation; correct metrics; clear plots/tables; deep comparative discussion; bias/limit analysis	Sound validation; good metrics; results interpreted; some comparative insight	Single split; ≥1 metric; brief commentary; little comparative depth	Weak validation or metric misuse; minimal interpretation	No valid evaluation; results absent or wrong
Error Analysis & Improvement	Systematic error inspection; insightful examples; targeted, justified improvements yielding measurable gains	Good error inspection; some targeted fixes; modest gains or clear attempt	Basic error check; generic comments; minor or no improvement	Superficial error notes; no real improvement attempt	No error analysis or improvement effort
Reflection & Ethics (10 %)	Insightful, critical reflection; links to theory; ethical/fairness issues & future work discussed in depth	Thoughtful review; strengths/limits noted; ethics considered briefly	Basic observations; limited depth; ethics mentioned superficially	Cursory comments; no critical insight; ethics absent	No reflection
Code Quality & Reproducibility (5 %)	Clean, well-commented code; seeds set; models saved; `requirements.txt` present	Mostly clean code; minor docs gaps; reproducible with tweaks	Readable but scant comments; some reproducibility issues	Messy code; hard to run; missing assets	Code fails or absent
Documentation & Presentation (5 %)	Notebook is a polished report; clear narrative; professional figures/tables	Well structured; minor prose/fig issues	Acceptable structure; some clarity issues	Poorly organised; hard to follow	Disorganised or missing

Standard Conversion Grade Scale : A + 90, A = 80–89.99, A- = 70–79.99, B+ = 66.67–69.99, B = 63.33–66.66, B- = 60–63.32, C+ = 56.67–59.99, C = 53.33–56.66, C- = 50–53.32, D+ = 46.67–49.99, D = 43.33–46.66, D- = 40–43.32